

CLAIMS:

1. A method of reproducing a trick play signal derived from a stored video stream, wherein the video stream (20) comprises data representing a series of first frame (22) and second frames encoded at a variable bit rate, the first frames (22) being decodable independent of any other frame, decoding of the second frames requiring reference to other frames, the method comprising
 - 5 selectively retrieving segments (26) of data from the video stream (20), each segment (26) corresponding to a part of data from the stream (20) with a selected length, with distances between successive retrieved segments (26) selected dependent on a trick play speed;
 - 10 generating a trick play video signal that comprises an earliest first frame (22) from each respective segment;
 - determining stream specific properties of the stream (20) that are indicative of a rate at which the first frames (22) occur in the stream (20);
 - 15 computing the selected length for use in said selective retrieving from the properties that have been determined, so that on the basis of the properties the segments (26) of said selected length are predicted to include data representing at least one whole first frame (22) at least on average.
2. A method according to Claim 1, wherein said determining comprises
 - 20 computing the selected length initially, prior to said selectively retrieving, from an estimated rate of a number of frames per unit of stream length based on a ratio between an intermediate stream size between points in the stream (20) that are separated at least a multiple of first frames (22), and a difference between time values that the stream associates with these points.
- 25 3. A method according to Claim 2, wherein said determining comprises adapting the selected length after said initial computing, concurrently with said selective retrieving of the segments (26), adaptive to an observed length of data from a start of a segments to a first following data representing a whole one of the first frames (22).

4. A method according to Claim 2, wherein said determining comprises regulating the selected length after said initial computing, the selected length being regulated so that on average each segment (26) contains a predetermined possibly non-integer average number of first frames (22).

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5. A method according to Claim 2, wherein said determining comprises

- determining a difference between time references that indicate relative playing time instants of data from mutually spaced points in the stream (20), the difference being indicative of a number of frames between the points, given a frame rate of the stream;
- 10 – determining a total length of data between said points;
- said computing comprising computing the selected length in proportion to a ratio of the total length and the number of frames between the points.

6. A video stream storage and reproduction apparatus, comprising

- 15 – a storage device (10) for storing a video stream (20), wherein the video stream (20) comprises data representing a series of first frames (22) and second frames encoded at a variable bit rate, the first frames (22) being decodable independent of any other frame, decoding of the second frames requiring reference to other frames,
- an access control device (16) arranged to retrieve segments (26) from the storage device
- 20 (10), for supplying the segments (26) to a decoding device (11) for use in trick mode display, a distance between successive segments (26) being selected dependent on the trick play speed, the segments (26) each containing a part of the of data with a selected segment length;
- a data segment length selection unit (14) arranged to determine stream specific properties
- 25 of the stream (20) that are indicative of a rate at which the first ones of the frames (22) occur in the stream (20), and to select the selected segment length for use in the trick play mode from said properties, so that on the basis of the properties the segments of said selected length are predicted to include data representing at least one whole first frame at least on average.

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7. A video stream storage and reproduction apparatus according to Claim 6, wherein the access control device (16) is arranged to select the distance between starting points of successive segments dependent on a selected trick play speed and a distance between the first frames (22) in the stream (20) that is derived from said properties.

8. A video stream storage and reproduction apparatus according to Claim 7, having a control interface for selecting the trick play speed, selectable trick play speeds not being limited to integer speed factors relative to a normal play speed.

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9. A video stream storage and reproduction apparatus according to Claim 6, wherein said selection of the selected data segment length comprises computing the selected length initially, prior to said selectively retrieving, from an estimated rate of frames per unit of stream length based on a ratio between an intermediate stream size between points in the stream (20) that are separated by at least a multiple of first frames (22), and a difference between presentation times that the stream (20) associates with these points.

10. A video stream storage and reproduction apparatus according to Claim 9, wherein said selection of the data segment length comprises adapting the selected length after said initial computing, concurrently with said selective retrieving of the segments, adaptive to an observed length of data from a start of a segment (26) to a first following data representing a whole one of the first frames (22).

11. A video stream storage and reproduction apparatus according to Claim 9, wherein said selection of the data segment length comprises regulating the selected length after said initial computing, the selected length being regulated so that on average each segment contains a predetermined possibly non-integer average number of first frames (22).

12. A video stream storage and reproduction apparatus according to Claim 9, wherein selection of the data segment length comprises

- determining a difference between time references that indicate relative playing time instants of data from mutually spaced points in the stream (20), the difference being indicative of a number of frames between the points, given a frame rate of the stream;
- determining a total length of data between said points;
- said computing comprising computing the selected length in proportion to a ratio of the total length and the number of frames between the points.

13. A method according to Claim 7, comprising generating an intermediate stream that contains synthesized groups of pictures that each contain and data from a retrieved one

of the first frames (22) and at least one synthesized further frame encoded in terms of update data for to the retrieved one of the first frames (22), the synthesized further frame defining substantially no update to the retrieved one of the first frames (22), the distance successive retrieved segments (26) being selected in proportion to a size of the synthesized groups of pictures.

14. Computer programme enabling a computer to be programmed to perform the method according to claim 1.
- 10 15. Carrier carrying the computer programme according to claim 14.